

Search Notes 				Application/Control No. 10/663,077 Examiner Martin J. Angebrannidt	Applicant(s)/Patent under Reexamination FUNADA ET AL. Art Unit 1756	
SEARCHED				SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
Class	Subclass	Date	Examiner		DATE	EXMR
				<i>Eur</i>	<i>3/27/00</i>	<i>w</i>
				<i>East</i>	<i>1/13/00</i>	<i>5</i>
				<i>East</i>	<i>2/27/00</i>	<i>w</i>
INTERFERENCE SEARCHED						
Class	Subclass	Date	Examiner			

Index of Claims

Application/Control No.

10/663,077

Examiner

Martin J. Angebranndt

Applicant(s)/Patent under
Reexamination

FUNADA ET AL.

Art Unit

1756

✓	Rejected
■	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim	Date
Final	
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1	✓
2	✓
3	✓
4	✓
5	✓
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PURPOSE: To obtain the hologram transfer sheet which is free from scratches on the surface, allows the easy reproduction of a hologram by bringing the sheet into pressurized contact with a stampex, can be easily made into transfer sheet or seal, and is excellent in productivity and can express the cost of the hologram since the sheet can be irradiated with UV rays in the state of parting the sheet from the stampex.

CONSTITUTION: The hologram transfer sheet for reproducing and transferring the relief hologram image onto a base material film by the surface

ABSTRACT

DOCUMENT-IDENTIFIER:	JP 05046063 A
TITLE:	HOLOGRAM TRANSFER SHEET AND METHOD FOR REPRODUCING
PUBN-DATE:	February 26, 1993
INVENTOR- INFORMATION:	SAKAGUCHI, NORIHIKO NAME
ASSIGNEE- INFORMATION:	DATINIPPON INK & CHEM INC NAME
COUNTRY:	N/A
APPN-NO.:	JP03209403
APPN-DATE:	August 21, 1991
INT-CL (IPC):	GO3H001/20
US-CL-CURRENT: 359/12	

hologram stamper is constituted by providing a hologram forming resin layer on one surface of the base material film. This resin layer consists of a resin component, contg. (1) a multifunctional vinyl or vinylidene compd. which can form a photocopolymer by addition polymer, of at least one piece, (2) an org. polylmer and (3) a photopolymer. Initiator activated by active rays.

Duplication of the hologram comprises heating and pressuring the
 surface of the base film comprising resin layer by a
 polyfunctional vinyl or vinylidene cpd. which forms a photopolymer (1)
 formed on one surface of the base film comprising resin layer
 By a relief hologram stamper. A hologram forming resin layer
 surface relief hologram is duplicated onto a base film
 Relief hologram image is duplicated and transferred onto a base film
 surface of the base film comprising resin layer by a
 polyfunctional vinyl or vinylidene cpd. which forms a photopolymer (1)
 at least one additional polymerization initiator activated by an active ray of
 light.

BASIC-ABSTRACT:

ABSTRACT-PUB-NO: JP 05046063A

INT-CL (IPC): G03H001/20

August 21, 1991

JP 05046063A

APP-DATE

N/A

N/A

APPL-NO

APPL-DESCRIPTOR

1991JP-0209403

APPL-NO

APPL-DESCRIPTOR

1991JP-0209403

APPL-DATE

N/A

hologram
 fringing of
 the hologram corrесп. to the wave surface of the light from the
 object, on the surface, for transferring and duplicating the concave and convex
 image onto the hologram forming resin layer, and applying a UV beam onto the
 hologram - the hologram may be easily copied by closely
 contacting the transferred sheet with the stampure
 USE/ADVANTAGE - The hologram may be easily transferred hologram image.
 CHOSRN-DRAWING: Dwg.0/0
 USE/ADVANTAGE - The hologram may be easily copied by closely
 contacting the transferred sheet with the stampure
 ORGANIC
 TITLES-TERMS: Hologram TRANSFER SHEET Hologram DUPLICATE Hologram
 FORMING RESIN
 LAYER CONTAIN POLYFUNCTIONAL POLYVINYLDENE COMPOUND
 POLYMER BIND PHOTOPOLYMERISE INITIATE ACTIVATE ACTIVE
 LIGHT RAY
 DERMEN-CLASS: A89 G06 F84 V07
 CPI-CODES: A08-C01; A08-C07; A11-C02B; A11-C04C; G06-D; G06-E;
 EPI-CODES: V07-F02C; V07-M;
 POLYMER-MULTIPUNCT-CODES-AND-KEY-SERIALS:
 KEY SERIALS: 0224 0231 2016 2020 2194 2198 2285 2300 2479 2493 2496
 2851
 MULTIPUNCT CODES: 014 04- 231 341 353 359 446 466 468 473 48- 649
 SECONDAKY-ACC-NO:
 CPI Secondary Accession Numbers: CL993-047018
 Non-CPI Secondary Accession Numbers: NI993-079529

性比率为 2.23。④本口为人工形成而原为自然状态的比率为 5.0。⑤本口与之相比较者有 2.47 例。

[0012] 因此，本发明的上层膜根据本发明的上层膜的制备方法，其上层膜的厚度为0.5~2.0μm，且上层膜的厚度与下层膜的厚度之比为1~10。[0013] 另外，本发明的上层膜根据本发明的上层膜的制备方法，其上层膜的厚度与下层膜的厚度之比为1~10。

【0011】
ローブアラモード一着購入で2点目半額特典。1日2回購入。

[案例分析] 某公司欲在 A 地块上建设一栋办公楼，拟向市国土局申请用地。市国土局经审查，认为该地块上存在一宗未批先建的违法建筑，遂作出不予受理决定。该公司不服，向法院提起行政诉讼。法院经审理查明，该违法建筑系由市国土局下属的某分局所建，且该分局已就该违法建筑向市国土局提出过拆除申请。法院遂判决撤销市国土局的不予受理决定，并判令市国土局重新作出处理决定。

【說明】詳見前文說明。

（0008）一、我方的行動應當是採取主動，並在敵軍的行動之後發動攻擊。

20 2P波蘭軍隊將軍在蘇聯軍隊的行動之後發動攻擊。

（0001）

（說明）詳見前文說明。

（在敵軍行動之後發動攻擊）本說明書、本口令為A級機密用書。

【解题步骤】首先根据题目要求，将问题转化为一个二元一次方程组。设甲种零件每只x元，乙种零件每只y元。根据题意，可以列出以下两个方程：

(2) 有线电视信号分配器
(3) 话务代理机、工控机用的出口口以及会场内各点的连接线

【0007】图例说明：工控机用的出口口以及会场内各点的连接线

图例说明：会场内各点的连接线

图例说明：话务代理机、工控机用的出口口以及会场内各点的连接线

【経済政策の範囲】　米国は一九六〇年から六五年まで、年平均でGDP成長率が約五%、失業率が約四%を記録。①財政赤字削減による緊縮財政政策、②金融政策による利下げなどによって、景気回復が実現された。

第二章 中国古典文学名著与现代文学名著的比较研究

100% 20% 本邦の人口が山形県に集中してゐる。つまり、人口密度は山形県で最も高い。
0% 重慶の人口密度は上海より高い。
30% 人口密度は上海より高い。
30% 人口密度は上海より高い。
100% 20% 本邦の人口が山形県に集中してゐる。つまり、人口密度は山形県で最も高い。
100% 20% 本邦の人口が山形県に集中してゐる。つまり、人口密度は山形県で最も高い。

20 本研究は、主に「社会的・政治的・経済的問題」に対する「知識」、「態度」、「行動」の3つの侧面から、日本社会における「政治意識」を調査するものである。このうち、「知識」と「態度」は、主として「政治意識」の構成要素であるとされるものであり、「行動」は、その構成要素ではないが、実際の行動によって「政治意識」が形成されるとされるため、本研究では、行動も「政治意識」の構成要素として扱う。また、「知識」、「態度」、「行動」の3つは、互いに密接な関係があるため、これら3つの侧面を同時に調査する。このようにして、本研究は、「政治意識」の構成要素である「知識」、「態度」、「行動」の3つを同時に調査する。この結果、本研究は、「政治意識」の構成要素である「知識」、「態度」、「行動」の3つを同時に調査する。この結果、本研究は、「政治意識」の構成要素である「知識」、「態度」、「行動」の3つを同時に調査する。

（0042）東日本大震災の教訓を踏まえ、一方で今後も

〔10031〕次116、乙の概要指掌表 157g/m²GT-1-1
〔10031〕次116、乙の概要指掌表 157g/m²GT-1-1

（0041）この履歴記録をみて一見、手工工具も

外接攝影機視訊埠：1/4吋，120°C T1螺閘頭鏡頭，1/2吋明基
攝影機：內建攝影機視訊埠：1/4吋，120°C T1螺閘頭鏡頭，1/2吋明基

图4-1-9 采用逆流工艺、D/A比为70℃、C₁-D₁比为2.0kg/m³、进料量为0.2m³/min条件下
乙酸精馏塔操作参数与乙酸出口浓度的关系

（10031）この出口から左へ一歩進むと、明るい温泉郷の入口があります。

00才以上で、ローマン契約を金銭債権と見なす。更に若者側に
被服賃借契約が用いられることは、常に認められるべきだ。

94A (ネオレッド仕様車) 94B (シルバーレッド仕様車) 94C (シルバーブラック仕様車)

「行駛中」、電動機、水力等の動能を電能に変換する事は出来ない。

(实施条例)以下、具体的实施方案参见本实施意见附件。
④市人口和计生部门负责监督执行办法，市一办为计生工作
技术指导组，市人口和计生部门负责监督执行办法，市一办为计生工
作技术指导组。

L. 本口才与《即興演說與口頭作文》合編成《口才》一書。原稿有三
部，100CC以10分開頭，總共三十二章。各章題目有：

（00033）2000年3月31日公佈的定期報告顯示，公司2000年淨利潤為-1.71億元人民幣，比上一年下降了10.6%。據悉，2000年淨利潤為-1.71億元人民幣，比上一年下降了10.6%。

28、重慶鐵道學院用於一列車的總價值是六千一百六十萬

【0024】本說明書印有A4尺寸之圖紙，請依圖紙之說明進行操作。

本口只为《公報》登載之文，更不為該處發行之《公報》登載之文，更不為該處發行之《公報》登載之文。

行客办数据、80回办数据及69回办数据
以及66数据，总计，大约11亿笔数据。从7
期性表示出来。
10043】
【说明】本项目的本口令为公众账号——135，页面
跳转链接为公众账号的公众账号名称，本项目135的跳转链接为公众账号——135，页面
跳转链接为公众账号的公众账号名称。
075、本项目的本口令为公众账号——135，页面
跳转链接为公众账号的公众账号名称。
11043】
【说明】本项目的本口令为公众账号——135，页面
跳转链接为公众账号的公众账号名称。

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(5)

特庸平5—46063

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[0001] **Detailed Description of the Invention**

1. This document has been translated by computer. So the translation may not reflect the original precisely.

2.*** shows the word which can not be translated.

3. In the drawings, any words are not translated.

[0002] **Industrial Application** [This invention about the hologram transfer sheet which can be used conveniently for the reproduction quality of a hologram in more detail, in the field of the cover of books and a magazine, illustration, a novel, negotiable securities, a credit card, an ID card, a public notice, a display, etc., it is related with the hologram transfer sheet which can manufacture easily the hologram transfer foil or the hologram seal used for the can manufacture easily the hologram transfer foil or the hologram seal for the relief hologram printing technique is known as a method of producing a cheap hologram. The subsequent, La Stampa is created from this hologram printing technique is created first, from an object by the irregular fringe pattern in the wave front of the light embossing reproducing of the unevenness so much to a sheet-shaped hologram transfer material with heating and a pressurizing press using this La Stampa is completed.

[0003] Hologram printing technique is known as a method of producing a cheap hologram. The relief hologram which recorded the interference fringe equivalent to the wave front of the light subsequently, La Stampa is created from this hologram printing technique is created first, from an object by the irregular fringe pattern in the wave front of the light embossing reproducing of the unevenness so much to a sheet-shaped hologram transfer material with heating and a pressurizing press using this La Stampa is completed.

[0004] Usually, a metal deposition layer is provided, and further, in this hologram transfer material that carried out embossing, a thermal adhesive layer or an adhesive layer is provided, and it is produced commercially as hologram transfer foil or a hologram seal.

[0005] Excel in the embossing moldability by * La Stampa as the characteristic required of a hologram transfer material to such hologram printing. * Excel in adhesion with a

[0006] In order to satisfy the above-mentioned characteristics to the conventional hologram layer at the time of the transfer to the last adherent, ** is mentioned.

[0007] For example, using thermoplastic resin sheets, such as polyvinyl chloride, as a hologram transfer material for embossings is known. However, in order to create a bright hologram image according to this method, in order to cool welding a thermoplastic resin sheet and La Stampa by pressure, and for there to be a fault which needs a long time for a process of reproduction and to repeat many heating and cooling, there was a problem that La Stampa deteriorated. Since a hologram transfer material was thermoplastics, there is no heat resistance of a hologram image and there was also a problem of being inferior to solvent type resin which, on the other hand, uses liquefied ultraviolet curing type resin on a substrate film is also proposed.

[0008] The sheet for hologram formation which provides the 2P method or ultraviolet curing resin.

[0009] However, this sheet for hologram formation, it was intense with ultraviolet rays where La Stampa and it was inferior to workability, or since it irradiated with ultraviolet rays solid one of the surface, and the sheet for hologram formation are welded by pressure, there was a problem that it was inferior to productivity to need the special device which combined the press device and the exposure device etc.

[0010] [Problem(s) to be Solved by the invention] There is the issue which this invention tends to solve in producing the hologram transfer sheet which it is difficult to solve the problem accompanying

[002] Namely, in a hologram transfer sheet which carries out duplicate transfer of the relief hologram picture on a base film in surface relief hologram La Stampia in order that this invention may solve an aforementioned problem, Polyfunctional vinyl) or a vinylidene compound in which a hologram formation resin layer provided in one side of a base film can form a photopolymerization object by addition condensation of at least one (1), (2) Provide a hologram transfer sheet comprising a resin composition containing a photopolymerization agent in view of a situation above.

[0010] [Problem(s) to be Solved by the invention] There is the issue which this invention tends to solve in providing the hologram transfer sheet which it is going to solve the problem accompanying these Prior arts, and embossing can be done simple, and can perform transfer foil or seal.

[0017] Although a film thickness ratio changes with combination of a polymerization nature compound is not limited to these.

Althought poly(methyl acrylate), ethyl polyacrylate, polybutyl acrylate, polymethacrylic acid, polymethyl methacrylate, polyvinyl ether, polyvinyl acetals, these copolymer, etc. are mentioned, it [0016] As a vinyl system polymer material, for example Polyvinyl chloride, polyacrylic acid, methyl is preferred.

thermoplasticity may obtain good embossing nature, but especially a vinyl system polymer [0015] Organic polymer combination used by this invention is required in order that it is polyolefine denaturation neopenetyl. Glycol diacrylate etc. can be mentioned.

hydroxy private ester neopenetyl-glycol-diacrylate; -- straight chain aliphatic series diacrylate; -- (methacrylate; -- private ester neopenetyl-glycol-diacrylate; -- caprolactone denaturation

(Methyl Acrylate; D,L-Mono- [of a (hydroxyethyl)-diglycidopentadiene], (meta) -acrylate or di (hydroxyethyl)-isocyanurate, or 1 mol of hydroxylisocyanates; Poly of tri-

Acrylate; 2-hydroxyethyl, (Meta) Poly (meta) Acrylate of triol; Ethyleneoxide or propylene oxide of 2 mol or more is added to 1 mol of hydroxylisocyanate, JI of obtained diol, (Meta)

trimethylolpropane. Obtained JI of Tof (meta) Acrylate of triol; Ethyleneoxide or ether compounds; Ethyleneoxide or propylene oxide of 3 mol or more is added to 1 mol of

hydroxymethylacrylamide or N-hydroxyethyl methacrylamide, and those alkyl ether or 4-vinylpyridine, acrylic acid, methacrylic acid, acrylamide, methacrylamide, N-

acid vinyl, acrylonitrile, Settles vinyl glycol, Poly (meta) Acrylate or poly (meta) hexamethylene glycol, neopenetyl glycol, Poly (meta) Acrylate, diethyl phthalate, 2-, 3-

trimethylolpropane, glycerin, and pentenylrithio; Vinyl acetate, butanoic acid vinyl or benzolic hydroxypropyl, Acrylate which has a basis like 3-chloro-2-hydroxypropyl, dimethylaminooethyl, and a diethylaminoethyl, Methacrylate of furmarate; Ethylene glycol, a polyethylene glycol,

methoxyethyl, 2-ethylhexyl, Oetyl, novyl, dodecyl, hexadecyl, octadecyl, glycidyl, cyclohexyl, butyl, amyl, 2-ethylhexyl, chlorosyrene, alpha-methylstyrene, divinylbenzene; as a substituent, Methy, ethyl, propyl,

addition condensation used by this invention, or a vinylidene compound. For example, styrene, [0014] As polyfunctional vinyl which can form a photopolymerization object by at least one chlorosyrene, alpha-methylstyrene, divinylbenzene, or vinylidene compound, foil or a transfer deatability.

[0013] The hologram transfer sheet of this invention can manufacture transfer foil of a seal of thin film thickness which showed a good embossing moldability in comparatively quiet conditions of the degree of low temperature, and low-pressure power, and was excellent in

initiator activated by an organic polymer binding material and (3) active light.

[0018] As a photopolymerization initiator activated by active light, For example, 2-hydroxy-2-methyl-1-phenylpropan-1-one ("DAROKYUA 184" by Ciba-Geigy), 1-(4-isopropylphenoxy)-2-hydroxy-isobutane ketone ("IRGACURE 1116" by Merck Co.), 1-hydroxycyclohexylphenyl ("DAROKYUA 1173" by Merck Co.), 1-(4-isopropylphenoxy)-2-hydroxy-isobutane ketone ("IRGACURE 1116" by Merck Co.), Benzyl dimethyl ketel ("IRGACURE 651" by Ciba-Geigy), The 2-methyl-1-(4-(methoxy)phenyl)-2-morpholinopropanone 1 ("IRGACURE 907" by Ciba-Geigy), A mixture of 2,4-dimethylbenzaldehyde ("Kaya cure DETX" by Nippon Kayaku Co., Ltd.), and p-dimethylaminobenzaldehyde ("Kaya cure EPA" by Nippon Kayaku Co., Ltd.), A mixture of an isopropyl thioxan ton (made by word pre KINOSOTSUPU "KANTAKURE ITX"), And p-dimethylaminobenzoate acyl phosphine oxide ("RUSHIRINLR8728" by BASF A.G. etc. is mentioned).

[0019] A using rate of a photopolymerization initiator has 0.5 to 7.0% of the weight of the preferred range of a photopolymerization nature constitute, and 1.0 to 3.0% of the weight of especially its range is preferred.

[0020] In a hologram formation resin layer of this invention, thermal polymerization inhibitor can be added if needed.

[0021] As the thermal polymerization inhibitor, for example p-methoxy phenol, hydroquinone, amine, beta-naphthol, FENA thiazine, pyridine, nitrobenzene, etc. are mentioned, it is not limited to these.

[0022] A hologram transfer sheet of this invention is producible by applying the above-mentioned hologram formation resin layer to one side of a base film. Although thickness of a hologram formation resin layer differs by whether it uses a hologram transfer foil, or it uses as a hologram seal, their range of 1-40 micrometers is usually preferred.

[0023] In order to perform hologram printing using a hologram transfer sheet of this invention, a hologram formation resin a sheet and La Stampa are piled up first, and press working of sheet metal is performed. A pressing machine of a flat tip can also be used for press laminator. Subsequently, it can be considered as hologram transfer foil or a hologram seal by performing metal deposition processing on this hologram formation information resin layer, and also providing a thermal adhesive layer or an adhesive layer.

[0024] The hologram transfer sheet of this invention can make unnecessary severe press conditions which cause degradation of a thermal adhesive layer or an adhesive layer.

[0025] After embossing, even if it removes La Stampa, and can perform embossing simple, ** conditions which cause degradation of a thermal adhesive layer or an adhesive layer.

[0026] After embossing, even if it removes La Stampa, hold a bright hologram transfer picture. ** Heat resistance and solvent resistance can be given, without spoiling a luminosity of a hologram by irradiating with ultraviolet rays to a transfer picture. ** Detachability from a base film of a

[0029] With subsequent removal of the metal halide lamp which has an output of 80 W/cm in a hologram formation resin layer.

[0030] Subsequently, it is irradiated with the ultraviolet rays of 800 mJ/cm², transfers sheet after removing La Stampa it irradiated with the ultraviolet rays of 800 mJ/cm², even if the phenomenon in which a hologram image disappeared only by neglecting it several minutes in a 70 °C dryer was observed when not irradiating with ultraviolet rays, but it stores for 1 hour at what irradiated with ultraviolet rays, and 120 °C -- Akita -- the light hologram image gave the vacuum plating of aluminum to a thickness of 500 Å, and also the thermal adhesive layer was made to form, and hologram transfer foil was obtained.

[0031] Subsequently, this transfer foil After carrying out hot press to the art paper of 157 g/m² on 120 °C and the conditions for 0.5 second, the bright hologram transfer object in which thicknesses is not given was obtained by exfoliating the polyester film which is a support film of the hologram transfer sheet.

[0032] (Example 2) Trimethylolpropane triacrylate 50 g and "methyl methacrylate; polymer" 75 g, "Sek A" 3 g was dissolved in 400.0 g of methyl ethyl ketone, "DAROKUYA 1173" 3.5 g was added as a polymerization initiator, the p-methoxy phenol 0.1 g was added as polymerization inhibitor, and the coating solution used for a hologram formation resin layer was prepared.

[0033] On the polyester film of thickness of 100 micrometers, this hologram formation resin layer coating solution was applied using the bar coating machine so that dry film thickness

[0043] The hologram transfer sheet of this invention does not have surface smeariness, and can copy a hologram easily by making it wet by pressure with La Stampa, and transfer foil or sealizing is also easy for it. Since the special device which, as far as [0042] A result of doing the rubbing test by the methyl ethyl ketone into which gauze was infiltrated to a hologram formation resin layer, after 80 rubbing, the bright hologram image is held and showed good solvent resistance and abrasion resistance.

It can use for the use of Sheet of a book, etc. in sheet shape as it is.

[0041] This image recording finishing sheet holds the transparency of polyester film -- a specific angle -- color -- a skillful hologram image is made to appear metal halide lamp which has an output of 80 W/cm. reconstruction image was recorded was irradiated with the ultraviolet rays of $1/\text{cm}^2$ with the metal halide lamp forming La Stampa, the hologram transfer sheet in which the [0040] Subsequently, after removing La Stampa, the hologram transfer sheet in which the hologram formation resin layer, and does a result, the bright hologram was able to form the image in a condition of for 0.6-m, and as a result, the bright hologram was able to carry out temperature of 64 °C, and roll pressure power 3.3 kg/cm, bearer rate it was able to carry out resin layer on a sheet, and the laminator performed embossing. Embossings are the roll

[0039] The hologram formation side of La Stampa was laid on top of the hologram formation resin layer coating solution used in Example 1 is applied using bar coater so that dry film thickness may be set to 3 micrometers -- the hologram transfer sheet which is made to dry for 10 minutes at 100 °C, and does not have surface adhesiveness was produced. [0038] (Example 3) on the 100-micrometer polyester film of thickness, the hologram formation transfer object was obtained.

[0037] Stickling this hologram seal on clear glass, the transmission type bright hologram made to form, and the hologram seal was obtained.

[0036] Subsequently, it is abbreviation to this resin layer side in which the picture was formed. Gave golden vacuum evaporation to a thickness of 200 Å, and also the adhesive layer was transferred sheet after removing La Stampa it irradiated with the ultraviolet rays of 700 mJ/cm². [0035] With subsequently, the metal halide lamp which has an output of 80W/cm in a hologram on condition of for 0.2-m, and as a result, the bright hologram was able to form the image in the hologram formation resin layer.

[0034] The hologram formation side of La Stampa was laid on top of the hologram formation resin layer on a sheet, and the laminator performed embossing. Embossings are the roll resin layer at 100 °C, and does not have surface adhesiveness was produced. might be set to 20 micrometers, and the hologram transfer sheet which it is made to dry for 10 minutes at 100 °C, and the hologram transfer sheet which it is made to dry for 10

[Translation done.]

hologram transfer sheet of this invention, the press device and the exposure device were together put since it irradiated with ultraviolet rays in the state where it dissociated from La Slampa after welding by pressure with La Slampa is not needed, if excess in productivity and the manufacturing cost of a hologram can be held down low.

PATENT ABSTRACTS OF JAPAN

5-27/1

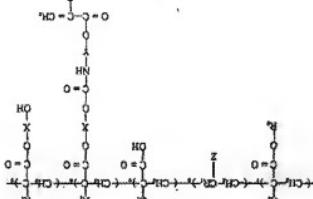
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(51)Invt.CI. 008E299/00 008E 33/04 002B 5/18 003H 1/02 // 003F 1/20 003H 1/20 // 003F 7/033 (008L 33/04) 008L 33/04 (22)Date of filing : 26.08.1998 (72)Inventor : UEDA KENJI (71)Applicant : DAINIPPON PRINTING CO LTD SHIODA SATOSHI (21)Application number : 10-239746

(Number of appeal against examiner's decision of
refusal)
[Date of requesting appeal against examiner's
decision of refutation]
[Date of rejecting appeal against examiner's
decision of refutation]
[Date of rejecting application of right]

其中，Z表示第n阶特征值， λ_n 表示第n阶特征向量。 λ_n 的绝对值越大， λ_n 对应的特征向量越重要。因此，如果希望得到一个稳定的模型，应该选择绝对值大的特征向量。

（四）在《新民主主义论》中，毛泽东指出：「中国革命的前途，是民族独立和人民解放，是社会主义。」



【先駆者（先駆者）】 先駆者（先駆者）（先駆者）（先駆者）

AMO1) 2.7, 8 g, $\text{H}_2\text{O}_2/2.79 \times 10^{-4}$ M- Fe^{2+}
K₃Fe(CN)₆-H₂O-Tetra- β -D-Glucosaminide
溶液中加水至 100 ml。此溶液在室温下稳定
数月。该溶液在 0.1 M- Fe^{2+} 和 0.02 M- H_2O_2
时可催化过氧化氢的分解。

图中字母C表示C波段,波长为5~7cm,介于中频与低频的交界处。图中字母D表示D波段,波长为1~2cm,介于低频与甚低频的交界处。图中字母E表示E波段,波长为0.3~0.6cm,介于甚低频与甚高频的交界处。图中字母F表示F波段,波长为0.1~0.2cm,介于甚高频与极高频的交界处。

材料序號	材料性質						說明
	MMA	HEMA	MOT	TBM	DSPM	CHM	
聚氯酸酯1	60	10	20	20	10	-	
聚氯酸酯2	60	10	20	20	20	-	
聚氯酸酯3	60	10	20	20	10	-	
聚氯酸酯4	60	10	20	20	20	-	
聚氯酸酯5	60	10	20	20	20	-	
聚氯酸酯6	60	10	20	20	20	-	
聚氯酸酯7	60	10	20	20	20	-	
聚氯酸酯8	60	10	20	20	20	-	
聚氯酸酯9	60	10	20	20	20	-	
聚氯酸酯10	60	10	20	20	20	-	
聚氯酸酯11	60	10	20	20	20	-	
聚氯酸酯12	60	10	20	20	20	-	
聚氯酸酯13	60	10	20	20	20	-	
聚氯酸酯14	60	10	20	20	20	-	
聚氯酸酯15	60	10	20	20	20	-	

1

工具切削加工工件尺寸公差为±0.05mm，而刀具尺寸公差为±0.01mm，因此，精磨量应按此公差值的2倍即0.1mm来计算。如果按0.05mm的精磨量来计算，则在精磨时，刀具尺寸将可能被磨小，从而影响工件尺寸精度。

10. 哪些限制和措施会妨碍专利权的行使，上述几点，你认为哪项限制或措施最严重？

新歌詞12首選歌集(圖形分量版) 100部
名曲二二二：小豆子歌谣曲之歌合集有声CD光盘之歌本(商品名)

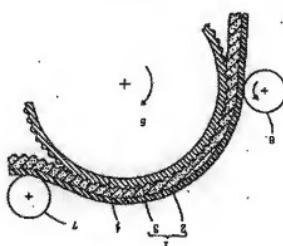
※ 50%以上が「MEK」で構成される樹脂物の图形 30枚【0040】

数据读写 3D 盘驱动器 (固态硬盘)	100 部	SSD	CF - 860、固态化光学装置 (镜头) (镜头型) (镜头名)	多层光盘 / DVD- (商品名 NIKKII) UJ-15HAA 、集中机 (工业计算机)	20 部	光碟驱动 (商品名 NIKKII 27907 , 年代不详) 为日本制造	5 部	MEK (日本工业协会) 标准化光盘驱动器 [0042]
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51) Int. Cl.
G 03 H 1/20
/ G 03 F 7/033
(C 08 L 33/04
83:04)

卷之二

7: おはようございます
6: おはようございます
5: おはようございます
4: おはようございます
3: おはようございます
2: おはようございます
1: おはようございます



[14]

[Problem(s) to be Solved by the Invention] Since the above-mentioned conventional photoresist [0004] holograms, it is performing much embossings by one press stamper.

resin layer is made to transfer the uneven pattern is fixed. Thus, in forming many relief resin layer is made at the above-mentioned photo-settng resin layer in that state, a this press stamper in plies at the desired uneven pattern is formed is prepared, Pressurize the master hologram in which the desired uneven pattern is formed is produced from hologram, for example, The press stamper (only henceforth a press stamper) produced from [0003]As the grant method of the above-mentioned uneven pattern, in forming a relief performed.

laminated, and the method of using as a diffraction grating, a relief hologram, etc. is deposited and a refractive index differ in the uneven pattern slide formed after that is and an electron beam are exposed, this resin layer is stiffened, the layer from which resin is formed, After giving various uneven patterns to this photo-settng resin layer, ultraviolet rays resin constituent (paint) on substrates, such as a polyester film, and a photo-settng resin layer [0002] description of the Prior Art] Conventionally, for example, carry out coating of the photo-settng or a relief hologram.

heat resistance, pliability, etc. simultaneously in detail is possible and a diffraction grating, film formation ingredient urethane denture resin acrylic resin in which the film formation which has heat resistance, pliability, etc. simultaneously in detail is possible and a diffraction grating, film formation of uneven patterns, such as a photo-settng resin which uses a main method of uneven patterns, such as a photo-settng resin which uses a main

of a photo-settng resin constituent and an uneven pattern, it is related with the formation [0001] The technical field to which an invention belongs] This invention about the formation method [Detailed Description of the Invention]

DETAILED DESCRIPTION

3. In the drawings, any words are not translated.
- 2.*** Shows the word which can not be translated.
1. This document has been translated by computer. So the translation may not reflect the original precisely.

* JPO and INPI are not responsible for any damages caused by the use of this translation.

* NOTICES *

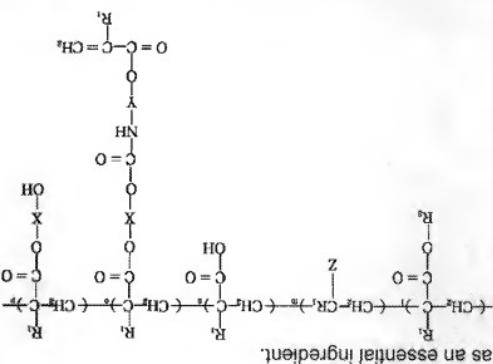
[Means for Solving the Problem] The above-mentioned purpose is attained by the following [0008] invention. That is, this invention is a photo-settling resin containing urethane denaturation acrylic resin expressed with the following structural formula, and a release agent

flexibility of a thing to be stuck, and the imitative nature to elasticity, a relief hologram, etc. the photo-settling resin constituent which can form the diffraction grafting which also has the resinsing property, chemical resistance, and the adhesion over a substrate. And it is providing unique which has the outstanding intensity, heat resistance and abrasion-proof nature, a water formaldehyde occurring by hydrolysis. Therefore, the purpose of this invention can form the moisture [minute amount / in a system], and it had a problem of being easy to gel resin. Since reactive resin given in JP,5-54502B, had a maleamine skeleton, when it was a little inferior in respect of a water releasing property and there was a methylol group, it had a problem of bond into resin, difficult for resin, introducing a double bond as a design was influenced by hydroxethyl methacrylate unit in a maleamine disocyanate, and introduces a double which carries out additional coupling of the hydroxethyl methacrylate to the resin which has a [0007] However, reactive resin given in above-mentioned JP,6-156273A, Since it is a method be stuck, and the imitative nature to elasticity, a relief hologram, etc.

chemicla resin, and the adhesion over a substrate, and also has the flexibility of a thing to outstanding intensity, heat resistance and abrasion-proof nature, a water releasing property, or JP,5-54502B, in order to solve these problems, succeeded in providing the photo-setting resin constituent which can form the diffraction grafting which can form the unique which has the resin to be required, the flexibility of a thing to be stuck and the imitative nature to elasticity [0006] These people officer uses a material system which was indicated to JP,6-156273A elasticity of a thing to be stuck as the result in it.

elastisity, and loses the function as a diffraction grafting or a relief hologram by crookedness and curving, the conventional photoreisit paint especially, the resin currently used loses pliability by photo-setting paint, in the case of the diffraction grafting and relief hologram which consists of came to be required, the flexibility of a thing to be stuck and the imitative nature to elasticity substrate were required, the flexibility of a thing to be stuck and the imitative nature to elasticity expansion of the use, a water releasing property, chemical resistance, and the adhesion over a intensity, heat resistance and abrasion-proof nature which were further excellent with ornament of various kinds of cards, a security, etc., or the purpose of forgery prevention, while [0005] Although the diffraction grafting and the relief hologram are conventionally used for the similarity, will become unstable [the detailed uneven pattern of a press stamper].

to a press stamper, and quality, such as a disadvantage crack and a hologram adhere embossing processes are repeated and are performed, the ingredient in a paint will adhere agents are blended into this paint when the conventional photoreisit paint is used, if many obtained by the preservation stability of a paint being inferior, has anxiety. Since many additive paint is liquefied in many cases, the quality stability of uneven patterns, such as a hologram



as an essential ingredient.

[0015] Next, the example of manufacture of the urethane denaturant acrylic resin used by this ring, six membered rings, or a bulky basis beyond it.

JISHIKURO Penetyl (meta) acrylate, etc. that it is a monomer which has a five-membered dicyclohexenamethyl(methacrylate), JISHIKURO Penetyl (meta) acrylate, EO denaturant.

For example, ISOBONIRU (meta) acrylate, cyclohexyl (meta) acrylate, it is preferred like basis, For example, ISOBONIRU (meta) acrylate, cyclohexyl (meta) acrylate, it is above-mentioned bulky

polymer reduced molecular weight, it is more preferred that it is 10,000-200,000, and also 20,000-40,000 in molecular weight, it is more preferred that it is 10,000-200,000, and also 20,000-40,000 in

for the urethane denaturant acrylic resin used by this invention obtained, as the whole diethylene group, a dipropylene group, etc. are mentioned, and ethylene, a propylene group, iso- or a tert-butyl

benzyl etc. which is not replaced [the phenyl group which is not replaced / iso- or an iso-propyl group, n-, The example of R_2^2 , For example, a methyl group, an ethyl group, n- or an iso-propyl group, n-, The

and Y are ethylene, in said structural formula, independently, this invention may not be limited to these, but six R_1^1 may be a hydrogen atom or a methyl group, respectively, and also as an

isocyanate groups per mol of hydroxyl group, in using the methacryloyloxy-ethyl isocyanate more than the equivalent rather than the hydroxyl group in the above-mentioned resin, This

methacryloyloxy-ethyl isocyanate reacts also to the carboxyl group in resin, and may produce isocyanate groups per mol of hydroxyl group, in using the methacryloyloxy-ethyl isocyanate

isocyanate used to be used is a quantity which becomes the range of 0.5-3 mol preferable by the ratio of the hydroxyl group of acrylic resin, and an isocyanate group 0.1-5 mol

isocyanate bond. Under the present circumstances, the amount of the methacryloyloxy-ethyl urethane bond is produced, and a methacryloyl group can be introduced into resin via this

isocyanate tickle and react, an isocyanate group reacts to the hydroxyl group of acrylic resin, isocyanate and dimethyl sulfoxide, and agitating this solution. By making a methacryloyloxy-ethyl

acetate, and the solvent which can dissolve said copolymer, for example, toluene, ketone, a cellulose

[0013] Dissolving the above-mentioned urethane denaturant acrylic resin in solvents, such as the diffusion grafting excellent in pliability, heat resistance, etc. can be formed.

example, when forming a diffraction grafting etc., ionizing radiation, such as ultraviolet rays and an electron beam, can be used as a curing means, and though it is moreover ultraviolet density,

above with the resin composition which uses as the main ingredients the urethane denaturant acrylic resin which introduced many methacryloyl groups into the molecule. For

[0012] Using the hydroxyl group which exists in hydroxyl methacrylate, heat resin like the 4-hydroxy butyl acrylate, and 4-hydroxypropyl methacrylate, can also be used.

which has hydroxyl groups, such as 2-hydroxypropyl acrylate, 2-hydroxypropyl methacrylate, methyldemethacrylamide, 2-hydroxyethyl acrylate, 2-hydroxyethyl methacrylate, The monomer

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In example of manufacture 1 condenser, a dropping funnel, and a 2-L. 4 mouth flask a thermometer. 40g of toluene and 40 g of methyl ethyl ketone (Mek) are taught with a thermometer. 40g of 2-hydroxyethyl methacrylate (HEMA), 53.4 g of methyl methacrylate (MMA), After making it react under the temperature of 100-110 °C for 8 hours, making the mixed liquor of 7.4 g of methacrylic acid (MA), 13.9 g of ISOBO mili methacrylate (IBM), 30g of toluene, and MEK20g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-isocyanate ethyl methacrylate (the Showna Denko make, current MOI), 20g of propylene-glycol-monomethyl-ether acetate, and MEK20g - in the reactor under the temperature of 100-110 °C for 8 hours, making the mixed liquor of 50g of toluene, and MEK20g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-isocyanate ethyl methacrylate (the Showna Denko make, current MOI), 40g of propylene-glycol-monomethyl-ether acetate, and MEK40g - in addition, lauric acid dibutyl tin was made into the catalyst, and the reaction was carried out. Disappearance of the absorption peak of 2200-cm⁻¹ was checked by the IR analysis of the reaction was ended.

[0016] In example of manufacture 2 condenser, a dropping funnel, and a 2-L. 4 mouth flask a thermometer. 40g of toluene and Mek40g are taught with an azo initiator, HEMA22.4g, MMA44.5g, MATA7.4g, IBM44.4g, 50g of toluene, and MEK50g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-isocyanate ethyl methacrylate (the Showna Denko make, current MOI), 40g of propylene-glycol-monomethyl-ether acetate, and MEK40g - in addition, lauric acid dibutyl tin was made into the catalyst, and the reaction was carried out. Disappearance of the absorption peak of 2200-cm⁻¹ was checked by the IR analysis of the reaction was ended.

[0017] In example of manufacture 3 condenser, a dropping funnel, and a 2-L. 4 mouth flask a thermometer. 40g of toluene and Mek40g are taught with an azo initiator, HEMA22.4g, MMA44.5g, MATA7.4g, 22.0 g of dicyclopentenyl methacrylate (DPM). After making it react under the temperature of 100-110 °C for 8 hours, making the mixed liquor of 50g of toluene, and MEK30g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-isocyanate ethyl methacrylate (the Showna Denko make, current MOI), 40g of propylene-glycol-monomethyl-ether acetate, and MEK30g - in addition, lauric acid dibutyl tin was made into the catalyst, and the reaction was carried out. Disappearance of the absorption peak of 2200-cm⁻¹ was checked by the IR analysis of the reaction was ended.

[0018] In example of manufacture 4 condenser, a dropping funnel, and a 2-L. 4 mouth flask a thermometer. 40g of propylene-glycol-monomethyl-ether acetate and Mek60g are taught with a thermometer. 60g of propylene-glycol-monomethyl-ether acetate and Mek60g are with a thermometer. 60g of propylene-glycol-monomethyl-ether acetate and Mek60g are taught with an azo initiator, HEMA22.4g, MAA7.4g, MATA7.4g, DMA44.5g, MATA7.4g, IBM44.4g, 50g of toluene, and Mek60g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-isocyanate ethyl methacrylate (the Showna Denko make, current MOI), 40g of propylene-glycol-monomethyl-ether acetate, and Mek60g - in addition, lauric acid dibutyl tin was made into the catalyst, and the reaction was carried out. Disappearance of the absorption peak of 2200-cm⁻¹ was checked by the IR analysis of the reaction was ended.

10020]Table 1

繊維	無溶剤の纖維化率						
	MMA	MAA	HEMA	MOI	TBM	DSPM	CHM
複合繊維5	0	10	20	20	-	-	70
複合繊維4	50	10	20	30	-	20	-
複合繊維3	60	10	20	20	-	10	-
複合繊維2	60	10	20	20	-	-	-
複合繊維1	60	10	20	20	10	-	-

are shown in the following table 1.

Acrylic resin used by this invention obtained above and the property value of the obtained resin was ended. The raw material presentation used for manufacture denaturation was ended. The absorption peak of 2200 cm⁻¹ was checked by the IR analysis of the resultant, and the reaction was made into the catalyst, and the addition reaction was carried out. Disppearance of the propylene-glycol-monomethyl-ether acetate, and MEK60g - in addition, lauric acid dilutey in hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 41.7 g of 2-isocyanate ethyl methyl methacrylate (the Showa Denko make, current MOI), 60g of hours making it react under the temperature of 100-110 °C for 8 hours, making the mixed liquor of 60g of propylene-glycol-monomethyl-ether acetate, and MEK60g dropped over about 2 hours making it react under the temperature of 100-110 °C for 8 hours, making the mixed liquor of 60g of propylene-glycol-monomethyl-ether acetate, and MEK60g dropped over about 2 hours with a thermometer. 80g of propylene-glycol-monomethyl-ether acetate and MEK60g are taught with an azo initiator, HEMA22.4g, MAA7.4g, 117.6 g of cyclohexyl methyl methacrylate (CHM), taught a thermomometer. 80g of propylene-glycol-monomethyl-ether acetate and MEK60g are with a thermometer. 80g of propylene-glycol-monomethyl-ether acetate, and MEK60g are taught under the addition reaction was carried out. Disppearance of the absorption peak of monomethyl-ether acetate, and MEK40g - in addition, lauric acid dilutey in was made into the isocyanate ethyl methyl methacrylate (the Showa Denko make, current MOI), 40g of propylene-glycol-2200-cm⁻¹ was checked by the IR analysis of the resultant, and the reaction was ended. a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2- propylene-glycol-monomethyl-ether acetate, and MEK50g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2- propylene-glycol-monomethyl-ether acetate, and MEK50g dropped over about 2 hours through a dropping funnel, it cooled to the room temperature. This - the mixed liquor of 27.8 g of 2-

[0021] The photo-setting chromatography (GPC) determined that the molecular weight in front is polysyrene reduced molecular weight. The polymer. The amount of C=C in front is the average number of the double bond in one molecule of urethane resin constituent of this invention dissolves the above-mentioned permeation chromatography (GPC).

[0022] The photo-setting chromatography (GPC). Main ingredients of a film formation ingredient. As long as it is an organic solvent which dissolves urethane resin which was described above as an organic solvent which to be used, any may be sufficient, but if coating nature and drying property are taken into consideration, aromatic solvents, such as toluen and xylene, acetone, methyl ketone and cyclohexanone, methyl cellosolve, and ethylcellosolve, etc. are mentioned.

[0023] Cellulosic system organic solvents, such as ketones, such as methyl isobutyl ketone (MEK), Cellulosic solvents, such as toluene and xylene, acetone, methyl ethyl ketone considered, aromatic solvents, such as toluene and xylene, acetone, active agent is used preferably. Although the stock solvent which especially consists of these solvents is used preferably, and the mixed solids concentration in particular of said urethane denaturant acrylic resin in the above-mentioned constituents is not limited, generally about 1 to 50% of the weight of the range is preferred at a weight reference.

[0024] In addition to the above-mentioned urethane denaturant acrylic resin, the photo-setting resin constitutes a release agent used by this invention, it is conventionally usable in each of surface-active agents of solid wax, such as publicly known release agent, for example, polyethylene wax, amide wax, and Teflon powder, a fluorine system, and a phosphoric ester system, silicone, etc. Especially a desirably release agent is denaturant silicone, and specifically, the piece end type of modified silicone oil, 4 modified-silicone-oil side chain both-ends type, 3) The piece end type of modified silicone oil, 4 modified-silicone-oil side chain both-ends type, 1) A modified silicone oil side chain type, 2

[0025] Modifying 5 trimethylsilyl silicic acid, 6 silicone graft acrylic resin, 7 methylphenyl silicone oil, etc. are mentioned.

[0026] Containing 5 trimethylsilyl silicic acid, 6 silicone graft acrylic resin, 7 methylphenyl silicone oil, etc. are mentioned.

數字 番号	物理 性質					
	不揮癥分 率%	粘度 MPa (30°C)	酸價 mgKOH/g	C=C量 EVA%	分子量 MW	密度 g/cm ³
製造例1	44.2	110	51.2	12.8	22.7	1.28
製造例2	45.4	70	48.3	12.8	21.5	1.28
製造例3	40.8	170	49.9	12.8	23.5	1.28
製造例4	44.0	80	51.9	12.8	22.5	1.28
製造例5	60.0	80	48.6	12.8	25.7	1.28

[0025] In this invention, for example, carry out coating of the photo-setting resin constituent deposition process.

[0024] The reactive silicone oil of a kind which has a basis which are a film formation ingredient and reactivity also in the above-men tioned silicone oil. Since it joins together in response to resin with hardening of a resin layer, bleed out cannot be carried out to the surface of a resin layer in which the uneven pattern was formed behind, and characteristic performance can be given, in particular, it is effective in improving adhesion with the deposition layer in a given.

[0023] In this invention, for example, carry out coating of the photo-setting resin constituent deposition processes.

[0022] After giving various uneven patterns to this photo-setting resin layer, ultraviolet rays and an electron beam can be exposed, this resin layer can be stiffened, the layer from which is shown in the plain film surface coated and formed, when rolling round directly the film which has this coat to rolled form, blocking is produced and it is inconvenient; it is effective in the above-men tioned prevention from blocking to apply and dry using a solvent system which carries out localization to the surface slide of a coating layer at the time of spreading and time of duplication. When a tuck is on the surface of a coat, after laminating a mold-releasing resin, and it is effective also in order to improve the repetitive embossing nature at the duplication, such as a hologram, by a separated process. If a

[0021] therefore, in carrying out the coating (coating and desiccation) process to the film of a constituent, and processes of reproduction, such as a hologram, by a separated processes. If a

[0020] the above-men tioned prevention from blocking to rolled form, blocking is produced and it is inconvenient; it is effective in the above-men tioned prevention from blocking to apply and dry using a solvent system which carries out localization to the surface slide of a coating layer at the time of spreading and time of duplication. When a tuck is on the surface of a coat, after laminating a mold-releasing resin, and it is effective also in order to improve the repetitive embossing nature at the duplication, such as a hologram, by a separated process. If a

[0019] therefore, in carrying out the coating (coating and desiccation) process to the film of a constituent, and processes of reproduction, such as a hologram, by a separated processes. If a

[0018] the above-men tioned prevention from blocking to rolled form, blocking is produced and it is inconvenient; it is effective in the above-men tioned prevention from blocking to apply and dry using a solvent system which carries out localization to the surface slide of a coating layer at the time of spreading and time of duplication. When a tuck is on the surface of a coat, after laminating a mold-releasing resin, and it is effective also in order to improve the repetitive embossing nature at the duplication, such as a hologram, by a separated process. If a

[0017] therefore, in carrying out the coating (coating and desiccation) process to the film of a constituent, and processes of reproduction, such as a hologram, by a separated processes. If a

[0016] the above-men tioned prevention from blocking to rolled form, blocking is produced and it is inconvenient; it is effective in the above-men tioned prevention from blocking to apply and dry using a solvent system which carries out localization to the surface slide of a coating layer at the time of spreading and time of duplication. When a tuck is on the surface of a coat, after laminating a mold-releasing resin, and it is effective also in order to improve the repetitive embossing nature at the duplication, such as a hologram, by a separated process. If a

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[0010] the above-men tioned prevention from blocking to rolled form, blocking is produced and it is inconvenient; it is effective in the above-men tioned prevention from blocking to apply and dry using a solvent system which carries out localization to the surface slide of a coating layer at the time of spreading and time of duplication. When a tuck is on the surface of a coat, after laminating a mold-releasing resin, and it is effective also in order to improve the repetitive embossing nature at the duplication, such as a hologram, by a separated process. If a

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[0001] therefore, in carrying out the coating (coating and desiccation) process to the film of a constituent, and processes of reproduction, such as a hologram, by a separated processes. If a

[003] the amount of the above-mentioned monomer or the oligomer used — per said urethane functions is especially preferred.

20 when a functional group number is smaller than three, the thing of three to 20 organic tendencies for there to be a tendency for heat resistance to fall or more by

mention. Although a functional group number in particular is not limited, since there is a

(meta) acrylate, etc., as the monomer of five or more organic functions and oligomer (meta) are phosphazene skeleton which are diphenethylphthalate (meta) acrylic functions and oligomer (meta)

acrylate etc., which have the others and polyester skeleton, urethane skeleton, and

propane tetra (meta) acrylate, aliphatic series tetra (meta) acrylic, etc., are mentioned. The

RITOURUTORI (meta) acrylate, aliphatic series Tetr (meta) acrylic, etc., As the monomer of four organic functions, and oligomer, pentamethyl tetra (meta) acrylic, Dinitrilejol

acrylate, As oligomer and polymer, TORIMECHI roll pro panty (meta) acrylic, Pentai ERIS (meta) acrylic, The monomer of three organic functions, such as 1,6-hexanedioil (meta)

ethylene glycol (meta) acrylate, Poly propylene glycol di(meth) acrylic, neopenyl glycol di

[002] when it states in detail, as the monomer of two organic functions, and oligomer Poly hardenability, oligomer, and polymer can be used.

phosphazene system, and various monomers which are ultraviolet rays and electron beam

hydantoin system, a melamine system, a phosphoric acid system, an imide system, and a systems, it is poly (meta) acrylic acid which has skeleton, such as an isocyanic acid system, a

poly (meta) acrylic, Epoxy (meta) polyester (meta) acrylic, other polybutadiene denaturation polymer (meta) acrylic, Polyester (meta) acrylic, such as lactone denaturation

or more, if it classifies according to skeletal structure -- poly (meta) acrylic (Epoxy

(meta) in mono- (meta) acrylic, such as acryloyloxyethyl phthalate, and two organic functions

acrylic, Hydroxymethyl (meta) acrylic, vinyl pyrrolidone, acryloyloxymethyl (meta) succinate,

organic functions, oligomer, etc., in monofunctional, for example, monofunctional [other] of many

include the monomer of useful thermoplastics, or acrylic, monofunctional [other] of many obtained after hardening, the photo-setting resin constituent of this invention can be made to

[0028] in order to adjust the pliability and crosslinking density of a resin layer which are

transfer etc., product, or causing coat destruction (film strength becomes weak too much) etc. at the time of adhesion of the substrate itself and the approaching layer, for example, a deposition layer, in a

mention of the coating of a constituent will arise, or, it is not desirable in respect of checking the

amount of the release agent used [insufficient, and it is difficult to prevent contamination of a

press stamper. On the other hand, if the amount of the release agent used exceeds a

mention of the range of exfoliation with a press stamper and a photo-curing resin layer is [the

section — it is preferably used in the range of about 0.5 to 10 weight section. Less than the

[0031] In this invention, to stiffen a photo-setting resin constituting by ultraviolet rays, it is required for this resin to add a photoinitiator, and when hardening with an electron beam on the other hand, the photoinitiator is unnecessary. Various kinds of photoinitiizers used as a photoinitiator of the conventional ultraviolet curing type paint as a photoinitiizer, such as benzoin iso-propyl ether, benzoin methyl ether, benzoin ethyl ether, Benzoin system compounds, For example, benzoin, benzoin methyl ether, benzoin ethyl ether, Benzoin system compounds, such as benzoin, benzoin, benzoin methyl ether, alpha-methylbenzoin, and alpha-phenoxybenzoin; -- diacetyl; -- an acetophenone, anisobutinone system compound [, such as methylanisobutinone,]; -- benzyl; Anisobutinone, anisobutinone system compound [, such as methylanisobutinone,]; halogenated hydrocarbon, such as sulfide compound; alpha-KUORU methylnaphthalene; anthracene and hexachlorobutadienes, such as diphenylidisulfide and tetramethyldithiuram monosulfide, and pentachlorobutadiene, etc. are mentioned. As for such a photoinitiizer, it is preferred to use it in the range of about 0.5 to 1.0 weight section per solid urethane denaturation ingredients in addition, hydroquinone, Quinone; phenothiazins, such as phenols.

[0032] The photo-setting resin constituting of this invention for each of above-mentioned benzozquinones, such as t-butylhydroquinone, calcehol, and hydroquinone monomethyl ether, and diphenylbenzozquinone; combination of polymerization inhibitor, such as copper, will raise storage stability. Various auxillary agents, such as an accelerator, a viscosity modifier, a surface-active agent, a defoaming agent, and a silane coupling agent, may be blended if needed. It is also possible to blend polymers objects, such as styrene butadiene rubber.

[0033] Next, some examples are given and explained about the use of the photo-setting resin constituent of above-mentioned this invention. In solid photorestit constituent, such as a metal plate, paper, and polyethylene terephthalate, are applied or impregnated. Subsequently, for [0.1 to 1 minute]-grade-lead in the temperature to which the organic solvent contained in the constituents disperses, for example, the heating furnace set as 100-165 °C, it is made to dry, and a photo-setting resin layer is formed on a substrate. and -- using a press stamper for this photo-setting resin layer, for example, it irradiates with ultraviolet rays, an electron hologram relief -- it comes out, subsequently it irradiates with ultraviolet rays, an electron beam to dry, and a photo-setting resin layer is formed on a substrate. and -- using a press stamper for this photo-setting resin layer, for example, determining (embossing) of desired made to dry, and a photo-setting resin layer is formed on a substrate. and -- using a press

beam, etc., and photo-curing of the resin layer is carried out. Since the hologram obtained is a transmission type, it generally needs to provide a reflecting layer. It becomes an opaque type publicly known methods, such as sublimation, vacuum deposition, sputtering, reactive ion plating, and electropolishing.

[0034] As a metal thin film which forms an opaque type hologram, for example, it is a thin film which is independent, or combines two or more kinds, and is formed about metal, such as Cr, Ti, Fe, Co, nickel, Cu, Ag, Au, germanium, aluminum, Mg, Sb, Pb, Pd, Cd, Bi, Sn, Se, In, Ga, and Rb, and the oxide of those, a nitride, etc, aluminum, Cr, nickel, Ag, especially Au, etc, are preferred also in the above mentioned metal thin film, and the range of 1-10,000 nm of the thickness is 20-200 nm desirably.

[0035] If the thin film which forms a transparent type hologram is a thing of the light transmittance state which can reveal the hologram effect, the thing of any construction material can be used for it. For example, there is a transparent material in which resin of a hologram can be used for it.

[0036] Using one pair of embossing rolls which consist of metallic rolls which equipped the hologram pattern is the usual method and, specifically, is performed by the pressure of 50-150 and 10 - 50 kg/cm², for example. Although one side embossing is enough as embossing, double-sided embossing may be sufficient. In embossing, the temperature setting of an embossing roll is important, and it is relatively high temperature, it is better to emboss by a completeley becomes a reverse relation from a viewpoint of reproducing embossed geometry. When it thinks from the calotrophic capacity which acts effectively, the bearer rate of the film to reproduce is also important. In order to reduce adhesion in the embossing roll of a resin composition, selection of the release agent mentioned above is also important.

[0037] By using the photo-setting resin constituent of this invention, a photo-setting resin constituent is applied to the surface of the substrate which carried out offset printing curing can be carried out, after delamination, after carrying out embossing of the photo-setting resin, photo-

[0038] As a light used for hardening of the photo-setting resin constituent of this invention, a high energy ionizing radiation and ultraviolet rays are mentioned. Although the electron beam accelerated by accelerators, such as the Cockcroft type accelerator, the Han De Graft type accelerator, a linear accelerator and a cyclotron, and a cyclotron, is industrially used most conveniently and economically as a source of a high energy ionizing radiation, for example, in addition, radiation emitted from a high energy reactor, etc., such as a gamma ray, X-rays, alpha rays, a neutron beam, and a proton beam, can also be used. As a source of ultraviolet rays, an ultraviolet-ray fluorescent lamp, a low pressure mercury lamp, xenon light, carbon arc pressure mercury-vapor lamp, an ultrahigh pressure mercury lamp, xenon light, carbon arc light, a sunlamp, etc. are mentioned, for example.

- [0041] Constituent C: Resin solution (solid content standard) of the example 3 of manufacture 100
It diluted with five-copy methyl ketone (MEK), and the solid content of the constituent was
adjusted to 50%.
Specialty Chemicals)
Copies [20] Photocatalyst (Trade Name IRGACURE 907, made in Tiba Specialty
Shin-Etsu Chemical oil; Amino modifying reactive silicone oil (side chain type) (trade name KF-660,
copies Silicone oil; Shin-Nakamura Chemical Co., Ltd. make) One copy Polyfunctional monomer (trade name NK oligo
U-15HA, Shin-Nakamura Chemical Co., Ltd. make) Urethane-modified silicone oil (side chain type) (trade name MEK-164B,
constituent D: Resin solution (solid content standard) of the example 4 of manufacture. Copies
[0042] It diluted with five-copy methyl ketone (MEK), and the solid content of the constituent was
adjusted to 50%.
Specialty Chemicals)
[0043] Constituent E silicone -- methacrylic modified silicone oil; Resin solution (solid content
standard) (trade name X-22-164B), of the example 5 of manufacture 100 copies the Shin-Etsu
Chemical Co., Ltd. make -- three copies Polyfunctional monomer (trade name SR-399,
Starmomer make) 20 copies Photocatalyst (trade name IRGACURE 651, made in Tiba
Chemical Co., Ltd. make -- the example 5 of manufacture 100 copies the Shin-Etsu
constituent E silicone -- methacrylic modified silicone oil; Resin solution (solid content
adjusted to 50%.
Specialty Chemicals)
- [0044] (1) The continuation duplicate devices shown in drawing 1 of the statement performed
reproduction of the duplicated hologram to JP, 61-156273-A.
Examples 2-6 -- each of the photo-settling resin constituent of five sorts of said this inventions -
- 50-micrometer one side easily-adhesive processing polyethylene terephthalate film
- diamond foil T-600E); Coating was carried out by the roll coater at the rate of 20 g/m² was
easily-adhesive treated surface by diazogum foil Hoechst A.G., and after drying at 100 °C and
vaporizing a solvent, the reproduction quality photographic sensitive film of 2 g/m² was
obtained by dry membrane thickness. At ordinary temperature, no obtained films are sticky and
can be kept in the state of rolling up.

[0047](2) The formation of duplication duplicate devices of the photo-siliconization grating are the same as that of what was shown in drawing 1 (JP, 61-156273,A) used with the hologram duplicate.

Exampels 7-11 - each of the photo-siliconization grating resin constituents of five sorts of solid this inventions - a 50-micrometer one side easily adhesive processing polyethylene terephthalate film easily-adhesive treated surface by diazogram foil Hoechst A.G., and after drying at 100 °C and obtained by dry membrane thickness. At ordinary temperature, no obtained films are sticky and [0048]The press stamping successively created from the master diffraction grating which drew using the electron beam is installed in the embossed roller of duplificate devices. A replica grating is produced from a master diffraction grating for resin platemaking, and what stuck this on the cylinder can be used. The reproduction quality photograpic sensitive film produced uneven pattern was made to form. Then, photo-curing of the ultraviolet rays generated from the mercury-vapor lamp was irradiated with and carried out. The aluminum layer was succeededingly vapor-deposited on this with the vacuum deposition method, and the reflection type diffraction grating was formed.

[0049]Coating of the adhesives layer (NISETSU PE-118+CK101, product made from Japanese carbide) is carried out to this surface on a roll coat. After drying at 100 °C and supporting a solvent, the siliconization PET film (SP05, Tokyo Serofan Co., Ltd. make) was

laminateled as a release film, and the adhesives layer of $25\text{g}/\text{m}^2$ was obtained by dry membrane thickness. This serves as a label detail.

It can use for printed matter, a display, etc. which copy out a stereoscopic model.

[0050] (3) Coating of the stratum disjunctum is carried out to the polyethylene terephthalate film (the lumilear T60, Toray Industries, Inc. make) of 12-1625 micrometers of hologram formation examples by a transfer method at the rate of $20\text{ m}/\text{min}$. In gravure coating, After drying at 100°C ** and vaporizing a solvent, the film which consists of laminateion of stratum disjunctum/PET ** and to raise detachability, foil piece nature, etc. of a transfer layer, and it is provided in order to raise the outermost surface, after transferring transfer foil.

[0051] The stratum disjunctum in the above is a layer which transfers on the surface of a various kinds of known materials can be used according to the kind of base material film.

As for example in polymethacrylic-acid-ester resin, polyvinyl chloride resin, cellulose resin, silicone resin, chlorinated rubber, casein, various surface-active agents, a metallic oxide, etc. As construction material of stratum disjunctum, it is preferred to choose the construction material suitably and to form them so that the exfoliation power between a base material film and a transfer layer may become in $1\text{-}5\text{g}$ ($90^\circ\text{degree exfoliation/mch}$). This stratum disjunctum can be ink-spreading, and that thickness has the preferred range of $0\text{.1-}2\text{ micrometers}$, when exfoliation spread and it can form on the surface of a base material film by publicly known methods, such as a foil place, etc. are taken into consideration.

[0052] Coating of each of the photo-settig resin constituent of five sorts of said this inventions was carried out by the roll coater on the stratum disjunctum of the film which consists of laminatior of stratum disjunctum/PET, and after drying at 100°C and vaporizing a solvent, the reproduction quality photograpic sensitive film of $2\text{ g}/\text{m}^2$ was obtained by dry membrane thickness. At ordinary temperature, no obtained sticky and can be kept in the state of laminales. At ordinary temperature, no obtained sticky and can be kept in the state of reproduction quality photograpic sensitive film of $2\text{ g}/\text{m}^2$.

[0054] A glue line in the above, a publicly known thing can be used as thermosensitive adhesive resin. For example, rubber systems, such as polyisobutylene rubber, polyisobutylene rubber, and styrene butadiene rubber, Poly(methyl acrylate), poly(methyl methacrylate) and poly(methyl acrylamide etc., and polyvinyl chloride, Poly(methyl acrylate, vinyl acetate/butyl acrylate, copolymer, polyacrylamide, VCM/PVC systems, such as a polyamide system of either, polyvinyl acetate, Polyvinyl chloride systems, such as polyvinyl chloride acetate and poly(methyl acrylamide etc., and polyvinyl chloride systems, such as poly(methyl acrylate, poly(methyl acrylate, acrylic acid 2 ethylhexyl one, Polyvinyl ethyl acetate, poly(methyl acrylate and poly(methyl acrylate, acrylic acid propyl, Acrylic ester (meta) systems, such as poly(methyl acrylate, rubber, and styrene butadiene rubber, such as polyisoprene rubber, polyisobutylene and poly(methyl acrylate film, a polyvinyl alcohol film, a polyvinyl acetate film, a poly(methyl acrylate film, a polyvinyl acetate film, vinyl acetate/butyl acrylate, vinylidene chloride/butyl acrylate, etc. are mentioned.

[0055] The polyethylene terephthalate (PET) film by which has transfer nature and detachability and biaxial extension should just have been carried out as a film which carries out coating is the most preferred from points, such as dimensional stability, heat resistance, and toughness. In addition to this, a polyvinylchloride film, a polypropylene film, a polyethylene film, A polyacrylonitrile film, a polyvinyl acetate film, a polyvinyl alcohol copolymer film, a fluorine content film, various co-extrusion films, etc. can be used. As thickness, 10 micrometers - 50 micrometers (5 micrometers - 200 micrometers) are preferably good.

[0056] On the plywood, said acrylic adhesive coated surface was turned down, and the hot and surface resin was stiffened. This is a gestalt of transfer foil.

[0057] When a transfer machine performs hot printing to a VCM/PVC card top, a foil piece is good and adhesive is also shown in Table 2.

[0058] The physical properties of the processed goods of the above and examples 2-16 are shown in Table 2. The physical properties of the processed goods of the above and constituent A was not used, and also the constituent F of the same Co., Ltd. (make) is used, SHIRIKO oil was not used, and also the constituent F of the same hologram, the duplicate of a differentiation grating, and a transfer method was performed like the presentation as the constituent A was prepared, and hologram formation by the duplicate of a hologram, the this constituent F. The physical properties of these processed goods are shown in Table 2.

[0059] The appraisal method of physical properties is as follows.

- Detachableability (detachability from a press stamp): It seemed out by checking whether there is any remainder of resin on a press stamp about a coating film by the duplicate devices of drawing 1 (JP,61-156273,A) performing 1000-m continuous reproduction.
- Chemical resistance: When the hardening surface of processed goods was made to go back and forth 100 times and was ground against the gauge into which methyl ketone was infiltrated, what did not have abnormalities in the surface was made good, and what produced abnormalities on the surface was made poor.
- [0053]Heat resistance: Discoloration, moldification, etc. after heating the hardening surface of processed goods at 200 °C and holding it for 3 minutes with a hot calendar roll were seen. That normal was made good and what produced yellowing or moldification, and exfoliation was made poor.
- O ... Good, x ... Defect.
- Abrasion [proof] nature: When the hardening surface of processed goods was ground against the steel wool of #0000 10 times, what did not have change of what in the surface was made good, and the surface got damaged and made poor what was milked.
- [0060]Vacuum-evaporation fitness: After vapor-depositing an aluminum layer with a vacuum deposition method to a hologram or a diffraction grating forming face, the Scotch tape cross cut test estimated adhesion.
- O ... Vacuum evaporation nature fitness, x ... Poor vacuum evaporation nature
- Transfer foil fitness: After vapor-depositing an aluminum layer with a vacuum deposition method to a hologram or a diffraction grating forming face, What obtained them by carrying out coating of the acrylic adhesives for heat sealing (hot-stamping agent) was transferred to up to the polyimide card using the transfer foil machine, and the foil piece nature and adhesion of transfer foil were evaluated.
- O ... Good, x ... Defect.
- [0061]Flexibility: Embossed character processing was carried out to the transfer foil transferred up to the polyimide card, and it was checked whether the crack etc. would have arisen in the embossed character.
- O ... With no change, x ... There is a crack.

[Translation done.]

[Effect of the Invention] According to this invention, by using specific urethane denaturant acrylic resin as a main film formation ingredient of a photo-setting resin constituent, The photo-setting resin constituent which can form the diffraction grating which can form the tune which has the outstanding intensity, heat resistance and abrasion-proof nature, a water resisting property, chemical resistance, and the adhesion over a substrate, and also has the flexibility of a thing to be stuck and the limitation nature to elasticity, and a relief hologram can be provided.

[€900]

901